Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT,PGPB; PLUR=YES; OP=OR		
L12	L10 and freeze	0	L12
L11	L10 and (nonsolvent or non-solvent)	0	L11
L10	L9 not l6	52	L10
L9	L5 same (potassium adj nitrate)	54	L9
L8	L7 not l6	1	L8
L7	L5 and l2	3	L7
L6	L5 same l2	2	L6
L5	L4 same l1	76	L5
L4	phase adj stabilized or psan	623	L4
L3	L2 and l1	486	L3
L2	freeze adj (dry or drying or dried)	24490	L2
L1	ammonium adj nitrate	13682	L1

END OF SEARCH HISTORY

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Terms	Documents
L10 and freeze	0

Database: US Patents Full-Text Database
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Search Results - Record(s) 1 through 2 of 2 returned.

☑ 1. Document ID: US 20020098143 A1

L6: Entry 1 of 2 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020098143
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020098143 A1

TITLE: Process for preparing phase-stabilized ammonium nitrate

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sampson, William P.	Sparks	NV	US	
Astrauskas, Peter J.	Mesa	AZ	US	

US-CL-CURRENT: 423/396; 23/300, 23/302A,. 423/266

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☑ 2. Document ID: US 20020096235 A1

L6: Entry 2 of 2 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020096235
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020096235 A1

TITLE: Process for preparing free-flowing particulate phase stabilized ammonium nitrate

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blomquist, Harold R.	Gilbert	AZ	US	

US-CL-CURRENT: 149/46

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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Search Results -

Terms	Documents
L9 not l6	52

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L10

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Search History

DATE: Friday, August 02, 2002 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB; PLUR=YES; OP=OR			
L10	L9 not l6	52	L10
L9	L5 same (potassium adj nitrate)	54	L9
L8	L7 not l6	1	L8
L7	L5 and l2	3	L7
L6	L5 same l2	2	L6
L5	L4 same l1	76	L5
L4	phase adj stabilized or psan	623	L4
L3	L2 and l1	486	L3
L2	freeze adj (dry or drying or dried)	24490	L2
L1	ammonium adj nitrate	13682	L1

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L10: Entry 48 of 52 File: USPT

DOCUMENT-IDENTIFIER: US 5641938 A
TITLE: Thermally stable gas generating composition

Brief Summary Text (25):
Phase stabilization of ammonium nitrate by the inclusion of potassium salts, such as potassium nitrate and potassium perchlorate is known. PSAN containing 15% by weight potassium nitrate will successfully avoid the problematic phase changes and volume changes associated with pure AN.

Brief Summary Text (30):
It is a feature of the invention that the chemical mixture includes a mixture of nitroguanidine and ammonium nitrate in a ratio effective to produce deflagration rather than detonation on ignition. It is another feature of the invention that phase stabilized ammonium nitrate is used to prevent physical breakdown of the propellant on thermal cycling. In one embodiment, potassium nitrate is added to provide thermal stability up to 110.degree. C. In addition, it is a feature of the invention that the flame temperature is less than 2450K.

Brief Summary Text (42):
The preferred phase stabilized ammonium nitrate contains from about 5% to about 25% by weight potassium nitrate and more preferably from about 10% to about 15% by weight potassium nitrate.

Detailed Description Text (4):
A quantity of 10% potassium nitrate in a phase stabilized ammonium nitrate mixture (10% KN-PSAN) was prepared by co-precipitating ammonium nitrate with 10 weight percent potassium nitrate from an aqueous solution. After drying, the solid was ball milled to reduce particle size producing a fine granular material.

Detailed Description Text (11):
The linear burn rate of these pellets was measured at 6.9 MPa (1000 psi) and found to be 8.1 mm (0.32 inch) per second. Differential scanning calorimetry (DSC) measurements revealed no endotherms characteristic of ammonium nitrate phase transitions over the temperature range of 0.degree. C.-115.degree. C.; confirming incorporation of potassium nitrate into ammonium nitrate to form PSAN. Endotherms corresponding to the ammonium nitrate Phase III-to-II and the Phase II-to-I structural phase transitions occurred at approximately 120.degree. C. and 130.degree. C., respectively. The onset of AN melting occurred at approximately 165.degree. C. and the onset of an exotherm was approximately 245.degree. C.